WHAT IS CLAIMED IS:

1. A method for operating a split-axis stage in an inspection system for planar substantially flat, flexible media containing elements of TFT-LCD arrays, the method comprising:

receiving the media at a first section of the split-axis stage, the first section characterized by a first handling precision;

transporting the media in a first direction using the first section to place the media in an observation region;

receiving the media at a second section of the split-axis stage from the first section, the second section including the observation region and being characterized by a second handling precision that is more precise than the first handling precision; and

positioning the media along an observation direction in the observation region using the second section.

2. The method of claim 1 wherein the first section has an upper surface with a plurality of orifices, the method further comprising:

introducing pressurized gas through the plurality of orifices in the first section to produce a gas bearing across the upper surface of the first section against the media to support the media; and

moving the media along the first direction under guidance of a rail oriented in the direction of the second section while attaching the media to at least one reciprocally movable vacuum contact which is constrained by the rail.

3. The method of claim 1 wherein the second section comprises a monolithic granite block and wherein the handling precision of the second section is enhanced by the stability of the granite block to be sufficient to controllably position the media within a final tolerance.

4. The method of claim 3 wherein the final tolerance in the direction orthogonal to a plane parallel to an upper surface of the second section to within 2.5 μm of any selected lateral position.

5. The method of claim 3 wherein the second section further includes an assembly for introducing a field of controllable gas emission associated with the second section, further including the step of generating both a vacuum at selected locations of the

second section and a pressurized gas bearing in the field associated with the second section in order to controllably suspend and vertically position the media.

6. The method of claim 5 further including characterizing physical attributes of the media during continuous translation of the media through said second section.

7. The method of claim 5 further including characterizing physical attributes of the media while holding the media stationary and then subsequently translating the media.

8. The method of claim 5 wherein media surface height compensation is of less than 10 μm over 40 mm to adjust for thickness variations in the media.

9. A split-axis stage in a flat panel inspection system suitable for inspection of large, substantially planar, thin, flexible media, the media comprising elements of TFT LCD arrays, the stage comprising:

a first section operative to position the media with a first handling precision and to transport the media in a first direction;

a second section physically coupled to the first section, the second section operative to receive the media from the first section, to position the media with a second handling precision, and to transport the media further in the first direction, only the second section including a stable and rigid support structure such that the second handling precision is more precise than the first handling precision; and

instrumentation mounted to the second section, the instrumentation being operative to characterize physical attributes of elements of the media received by the second section from the first section.

10. The inspection system stage according to claim 9 wherein the first section is modular and the second section is modular and removably connectable to the first section, and wherein the support structure of the second section comprises a granite slab.

11. The inspection system stage according to claim 10 wherein the handling precision of the second section is enhanced by the stability of the granite slab to be sufficient to controllably position the media within a final tolerance.

12. The inspection system stage according to claim 11 wherein the final tolerance in the direction orthogonal to a plane parallel to an upper surface of the second section to within 2.5 μm of any selected lateral position.

13. A method for characterizing substantially planar, flexible media suitable for thin film transistor liquid crystal displays (TFT LCDs) comprising:

receiving the media at an opposing surface of a first section of a characterization stage;

supporting the media on a first pressurized gas bearing;

controlling position of the media above the opposing surface of the first section at a first height, the first height defined by a distance from the bottom surface of the media to the opposing surface of the first section;

transporting the media across the opposing surface of the first section in a first direction;

receiving the media from the first section at an upper surface of a second section coupled to the first section; and

controlling position of the media above the upper surface of the second section at a second height, the second height defined by a distance from the bottom surface of the media to the upper surface of the second section, wherein the second height is less than the first height.

14. The method of claim 13 wherein the second section comprises an assembly of the second section for producing a field of controllable gas emission, further including the step of producing both a vacuum at selected locations of the second section and a second pressurized gas bearing in the field in order to controllably suspend and vertically position the media.

15. The method of claim 14 wherein the field producing assembly comprises a porous medium.

16. The method of claim 14 wherein the porous medium is selected from the group consisting of porous ceramics, foamed metals, porous glass, and synthetic porous materials.

17. The method of claim 14 wherein the producing step comprises using vacuum ports integrated with the porous medium.